

7 November 2005

Ms. Kasey Ashley
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

Subject: Results of August 2005 Groundwater Monitoring
Shoreline Development Property
2 T Street, Eureka, California

Dear Ms. Ashley:

This letter transmits results of groundwater monitoring performed in August 2005 at the Shoreline Development Property in Eureka, California (Figure 1). GeoSyntec Consultants prepared this report on behalf of Shell Oil Company.

In accordance with Monitoring and Reporting Program No. R1-2001-83 (M&R 83), issued on 30 July 2001 by the California Regional Water Quality Control Board, North Coast Region (RWQCB), annual groundwater monitoring was performed at the site in December 2004. The results were transmitted to the RWQCB on 14 January 2005¹. By letter dated 11 February 2005, the RWQCB provided comments on the 2004 Annual Report². In their comments, the RWQCB concurred with the recommendation to collect groundwater samples from wells MW-6 and MW-7 during August 2005 because a sample could not be collected during the December 2004 monitoring event due to standing water. This report documents the effort of the August 2005 groundwater monitoring event at the site.

¹ GeoSyntec Consultants, 2005, "Results of 2004 Annual Groundwater Monitoring," 14 January.

² California Regional Water Quality Control Board, North Coast Region (RWQCB), 2005, "Comments on Results of 2004 Annual Groundwater Monitoring," Shoreline Development, 2 T Street, Eureka, California, 11 February.

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SITE SETTING

The 2.6-acre site is located at 2 T Street, in Eureka, California and is bounded on the north by Humboldt Bay. The site elevation is approximately 10 feet above mean sea level (msl). The site was formerly the location of a bulk petroleum storage facility that contained six aboveground storage tanks, five underground storage tanks and an unlined retaining basin. Currently, the site is unpaved and vacant.

Between 1995 and 1997, approximately 10,000 cubic yards (yd³) of hydrocarbon-impacted soil at the site was excavated from 5 areas in the southern portion of the site, treated on-site and then replaced in the excavations together with clean backfill. The soil data from the excavation indicated the soil cleanup goals were met with the excavation activities; however, the groundwater quality goal of 50 micrograms per liter (µg/L) for total extractable petroleum hydrocarbons (diesel-range hydrocarbons) was not met. In the Remedial Action Plan (RAP) for the site, Shell proposed monitored natural attenuation to address the diesel-range hydrocarbons present in groundwater³. In their approval of the RAP, the RWQCB issued M&R 83, which required groundwater monitoring on an annual basis to verify the groundwater remedy for the site⁴.

The monitoring well network at the site consists of six on-site monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-6, and MW-7) and two off-site, upgradient monitoring wells (MW-9 and MW-10) installed in December 1991 and January 1994 at locations shown on Figure 2. Monitoring wells MW-5 and MW-8 were destroyed during soil excavation activities in 1995.

SAMPLING PROCEDURES

The August 2005 groundwater monitoring event was performed on 1 August 2005 and consisted of measuring water levels in the accessible site monitoring wells and collecting and analyzing groundwater samples from wells MW-1, MW-2, MW-6 and

³ Pacific Environmental Group, 1999, "Remedial Action Plan," Former Shell Bulk Fuel Terminal, 2 T Street, Eureka, California, Case No. 1THUO78, 6 July.

⁴ RWQCB, 2001, "Concurrence with Remedial Action Plan," 30 July.

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MW-7. Blaine Tech Services, Inc. (Blaine Tech) of Sacramento, California performed the fieldwork and their sampling logs are provided in Attachment 1.

GROUNDWATER ELEVATION AND FLOW DIRECTION

Before measuring the depth to groundwater, Blaine Tech used an interface probe to evaluate the presence of floating product; none was detected in any of the wells. The groundwater elevation at the site ranged from 7.70 feet above mean sea level (msl) in monitoring well MW-10 to 5.06 feet above msl in monitoring well MW-1. Table 1 summarizes groundwater levels measured during sampling events since October 2001, including the current event. Groundwater elevation contours for the August 2005 sampling event are shown on Figure 2.

The groundwater flow direction for the August 2005 monitoring event is predominantly to the northeast. The average flow gradient is 0.0048 ft/ft (25.26 ft/mile). The historical groundwater flow direction has been typically to the north under a similar gradient.

ANALYTICAL RESULTS

Calscience Environmental of Garden Grove, California, provided all sample containers and analyzed the groundwater samples collected from monitoring wells MW-1, MW-2, MW-6 and MW-7. Calscience analyzed the samples for total petroleum hydrocarbon as diesel (TPHd) with and without silica gel cleanup using EPA Method 8015M. The TPHd analyses were run with silica gel cleanup to remove organic material that may influence the diesel concentration determination. The analytical laboratory report is provided in Attachment 2.

Analysis of TPHd without silica gel cleanup indicated TPHd was detected in MW-1, MW-2, MW-6 and MW-7 at concentrations of 630 micrograms per liter ($\mu\text{g/L}$), 1000 $\mu\text{g/L}$, 1900 $\mu\text{g/L}$, and 1000 $\mu\text{g/L}$, respectively. When the TPHd analysis was performed with the silica gel cleanup, the concentrations in MW-1, MW-2, MW-6 and MW-7 were 180 $\mu\text{g/L}$, 440 $\mu\text{g/L}$, 550 $\mu\text{g/L}$, and 560 $\mu\text{g/L}$, respectively. It appears that naturally occurring hydrocarbons contribute to the TPHd concentrations detected in the analyses performed without the silica gel cleanup.

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QA/QC

GeoSyntec conducted a quality assurance/quality control (QA/QC) review of the analytical data. Data were reviewed for completeness, accuracy, precision, sample contamination, conformance with holding times, and detection limits within acceptable ranges. The results of the review indicate the data are of acceptable quality.

RESPONSE TO RWQCB COMMENTS

With the monitoring events in April and August 2005, GeoSyntec and Shell have addressed two of the comments provided by the RWQCB regarding the 2004 Annual Groundwater Monitoring Report: 1) monitoring wells MW-6 and MW-7 were sampled in April 2005 to serve as seasonal high groundwater samples from the rainy season (Comment #2); and 2) this current event was performed to evaluate the apparent increasing concentrations of TPHd (Comment #3). The RWQCB also commented on the anomalous groundwater elevation from MW-2 in December 2004 (Comment #5); after checking with the field personnel and reviewing the field logs, it appears the anomalous elevation is the result of a field transcription error.

To address the remaining comments, GeoSyntec proposes to:

- sample groundwater monitoring wells MW-1, MW-2, MW-3, MW-6, MW-7, MW-9, and MW-10 in December 2005 and report the results to the RWQCB;
- check status of MW-4 (bent stovepipe reported) and make recommendation whether to destroy;
- resurvey the existing groundwater monitoring wells in December 2005 and include the results in the groundwater monitoring report; and
- include a discussion of whether 50 µg/L is appropriate as the cleanup level for TPHd in groundwater at the site. For example, the Environmental Screening Level (ESL) from the San Francisco Bay RWQCB for TPHd is 640 µg/L for potential impacts on freshwater or marine aquatic habitats and non-drinking groundwater resources.

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The report including the above information will be submitted to the RWQCB by 31 January 2005. If you have any questions or comments, please contact Ms. Campagna at (707) 399-7878 or the undersigned at (510) 836-3034.

Sincerely,

Susan H. Skoe

Susan H. Skoe, P.E.
Project Engineer



Nancy T. Bine, for

Carolyn Kneibler, C.H.G.
Associate Hydrogeologist

Copy w/attachments to:

Ms. Carol Campagna, Shell Oil Company
Mr. James Clark, Humboldt County Health Department
Mr. Fred Griffith, CUE, IV, LLC
Ms. Linda Mackey-Taverner, SCS Engineers

Attachments:

Table 1	Groundwater Monitoring Results
Figure 1	Site Location Map
Figure 2	Analytical Results and Groundwater Elevation Contour Map - August 2005
Attachment 1	Blaine Tech Field Report
Attachment 2	Calscience Analytical Data Report



Table 1
Groundwater Monitoring Results
Shoreline Development, Eureka, California

Well No.	Date	TOC Elevation (ft msl) ¹	Depth to Water (ft)	Groundwater Elevation (ft msl)	TPHd without silica gel (ug/L)	TPHd with silica gel (ug/L)
MW-1	Aug-05	8.84	3.78	5.06	630	180
	Apr-05		5.57	3.27	--	--
	Dec-04		2.64	6.20	<500	<50
	Dec-03		2.10	6.74	190	84
	Dec-02		5.28	3.56	67	<50
	Oct-01		3.75	5.09	100	100
MW-2	Aug-05	9.48	3.80	5.68	1000	440
	Apr-05		1.67	7.81	--	--
	Dec-04		0.43	9.05	<500	<50
	Dec-03		1.72	7.76	520	120
	Dec-02		4.40	5.08	200	<50
	Oct-01		4.25	5.23	560	300
MW-3	Aug-05	9.16 ²	6.60	NE	--	--
	Apr-05		4.72	NE	--	--
	Dec-04		3.96	NE	--	--
	Dec-03		4.27	NE	--	--
	Dec-02		6.35	NE	--	--
	Oct-01		7.80	NE	--	--
MW-4	Aug-05	9.28 ²	NS ³	NE	--	--
	Apr-05		3.21	NE	--	--
	Dec-04		3.11	NE	--	--
	Dec-03		4.00	NE	--	--
	Dec-02		7.04	NE	--	--
	Oct-01		8.10	NE	--	--
MW-6	Aug-05	9.59 ²	8.37	NE	1900	550
	Apr-05		10.09	NE	990	170
	Dec-04		7.21	NE	1,800	110
	Dec-03		6.64	NE	2,100	920
	Dec-02		7.79	NE	180	<50
	Oct-01		8.25	NE	410	200
MW-7	Aug-05	8.73	3.38	5.35	1000	560
	Apr-05		3.61	5.12	430	110
	Dec-04		--	NS	NS	NS
	Dec-03		2.18	6.55	1,200	410
	Dec-02		3.56	5.17	59	<50
	Oct-01		3.55	5.18	98	40
MW-9	Aug-05	10.81	3.13	7.68	--	--
	Apr-05		1.16	9.65	--	--
	Dec-04		1.20	9.61	--	--
	Dec-03		1.76	9.05	--	--
	Dec-02		3.22	7.59	--	--
	Oct-01		3.90	6.91	--	--
MW-10	Aug-05	10.81	3.11	7.7	--	--
	Apr-05		1.41	9.40	--	--
	Dec-04		0.85	9.96	--	--
	Dec-03		1.68	9.13	--	--
	Dec-02		3.23	7.58	--	--
	Oct-01		4.15	6.66	--	--

Notes:

1) Top of Casing (TOC) Elevation last surveyed October 1995

2) Casing elevation in doubt; groundwater elevation not calculated

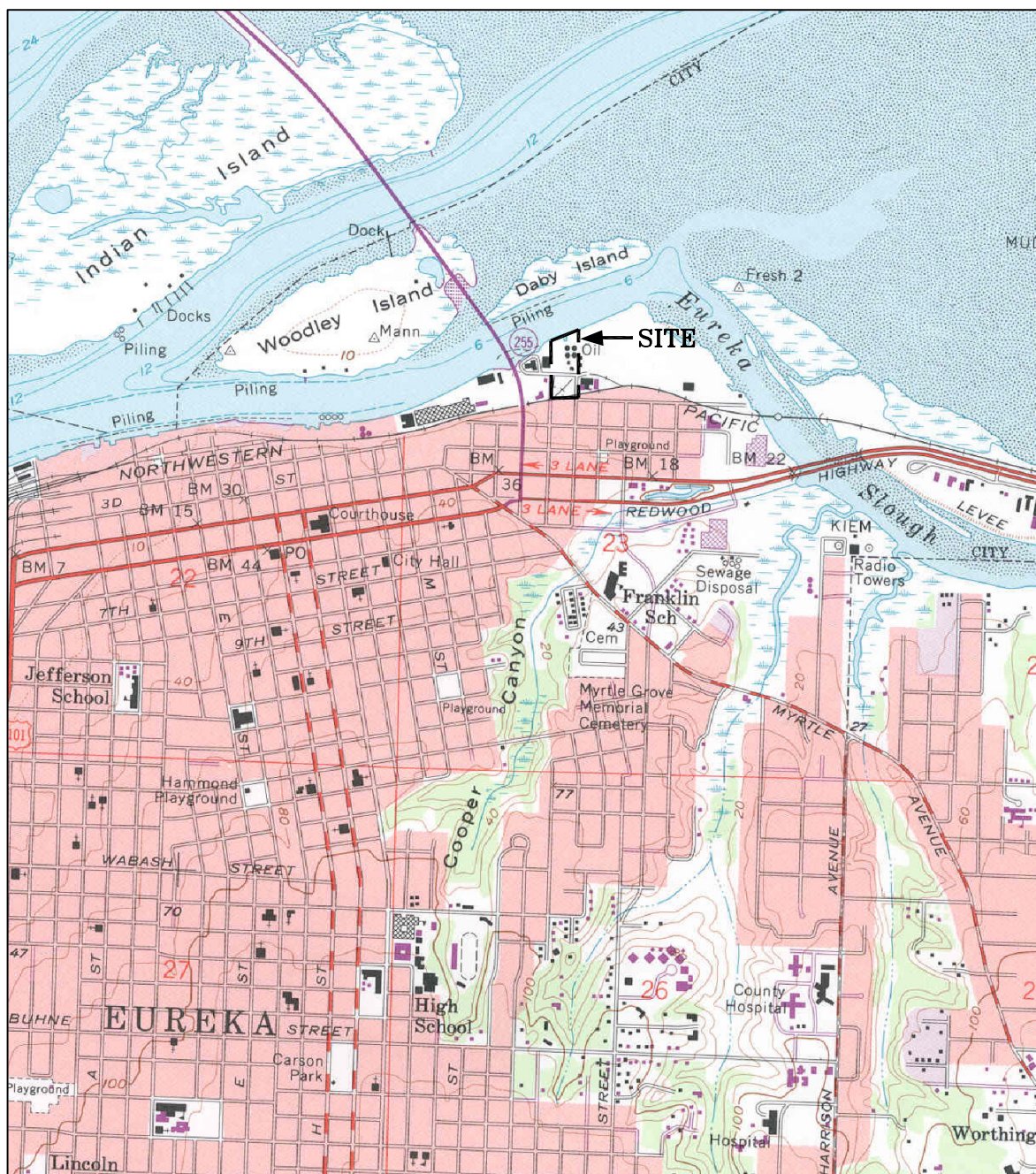
3) Due to damaged standpipe & casing, the well was dry

"--" Not Sampled

NE - Not Estimated

TPHd - Total Petroleum Hydrocarbons as diesel

NS - Not sampled



Topo Source: U.S.G.S. 7.5 Minute Series,
Eureka, CA Quadrangle (1972)
Contour Interval = 20 ft

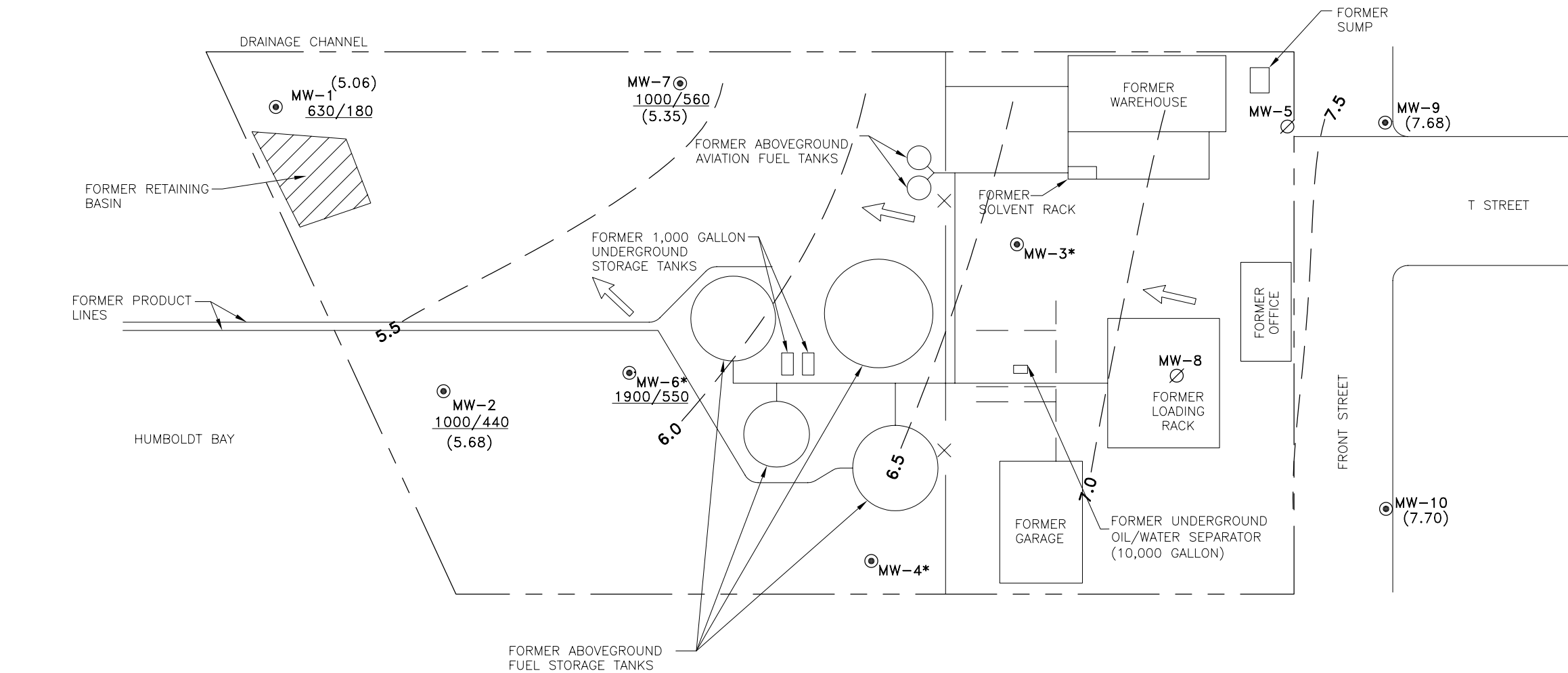
SITE LOCATION MAP
SHELL SHORELINE DEVELOPMENT
EUREKA, CALIFORNIA

0 1000 2000
APPROX.
SCALE IN FEET



GEOSYNTEC CONSULTANTS

FIGURE NO.	1
PROJECT NO.	WR0575
DATE	NOVEMBER_2005
FILE NO.	SITE_LOCATION



LEGEND

- MW-1 ● GROUNDWATER MONITORING WELL (MW-4 LOCATION APPROXIMATE)
- MW-5 ∅ DESTROYED GROUNDWATER WELL
- (5.06) GROUNDWATER ELEVATION IN FEET-MSL, 8/1/05
- 630/180 TPHd/TPHd WITH SILICA GEL CLEANUP CONCENTRATION IN GROUNDWATER (ug/L)
- 7.0 — GROUNDWATER ELEVATION CONTOUR IN FEET-MSL
- * CASING ELEVATION IN DOUBT; WELL NOT USED IN CONTOURING
- ↗ APPROXIMATE DIRECTION OF GROUNDWATER FLOW



0 30 60
SCALE IN FEET



GEOSYNTEC CONSULTANTS

GROUNDWATER MONITORING RESULTS – AUGUST 2005
SHORELINE DEVELOPMENT PROPERTY
2 T STREET, EUREKA, CALIFORNIA

FIGURE NO.	2
PROJECT NO.	WR0575
DATE:	18 OCTOBER 2005

ATTACHMENT 1

BLAINE TECH FIELD REPORT

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
PHONE (408) 573-0555
FAX (408) 573-7771

CHAIN OF CUSTODY	BTS # 050801-BM2
CLIENT	Geosyntec Consultants
SITE	Shoreline Development
	2 T Street
	Eureka, CA

C = COMPOSITE ALL CONTAINERS

[illegible][illegible]

RESULTS NEEDED NO LATER THAN	
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Standard TAT

RECEIVED BY

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COOLER #

TIME SENT

DATE SENT

SHIPPED VIA

WELLHEAD INSPECTION CHECKLIST

Page ____ of ____

Client Geosyntec Date 8/1/05

Site Address 2 T St. Eureka

Job Number 050801-Bu12 Technician BM

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
MW-1		lock not fitted						
MW-2		1/2 bolts stripped		lock + cap not fitted				
MW-3		standpipe lid broken						
MW-4		standpipe + casing damaged (h.t)						
MW-6		standpipe lid broken						
MW-7		missing 1/2 bolts						
MW-9	X							
MW-10		1/2 tabs stripped						

NOTES: _____

WELL GAUGING DATA

Project # 050801-BW2 Date 8/1/05 Client Geosyntec

Site Shoreline Development

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	C/D
MW-1	4					3.78	17.24	TOC	3
MW-2	4					3.80	18.20		2
MW-3	4					6.60	21.63		
MW-4*	4					DRY	4.60		
MW-6	4					8.37	18.80		1
MW-7	4					3.38	17.82		4
MW-9	3					3.13	14.70		
MW-10	3					3.11	11.23		
* MW-4 has a damaged standpipe + casing									

WELL MONITORING DATA SHEET

Project #: <u>050801-BM2</u>	Client: <u>Geosyntec</u>
Sampler: <u>BM</u>	Date: <u>8/1/05</u>
Well I.D.: <u>MW-1</u>	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): <u>17.24</u>	Depth to Water (DTW): <u>3.78</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>6.47</u>	

Purge Method: Bailer Disposable Bailer Positive Air Displacement Electric Submersible <input checked="" type="checkbox"/>	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer Disposable Bailer <input checked="" type="checkbox"/> Extraction Port Dedicated Tubing Other: _____
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Time	Temp (°F or °C)	pH	Cond. (mS or <u>µS</u>)	Turbidity (NTUs)	Gals. Removed	Observations
<u>11:46</u>	<u>59.9</u>	<u>7.4</u>	<u>8965</u>	<u>26</u>	<u>9</u>	
<u>11:48</u>	<u>58.5</u>	<u>7.3</u>	<u>7565</u>	<u>22</u>	<u>18</u>	
<u>11:50</u>	<u>58.1</u>	<u>7.3</u>	<u>7515</u>	<u>21</u>	<u>26</u>	

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: <u>26</u>	
Sampling Date: <u>8/1/05</u>	Sampling Time: <u>11:55</u>	Depth to Water: <u>6.21</u>
Sample I.D.: <u>MW-1</u>	Laboratory: Kiff <u>CalScience</u>	Other: _____
Analyzed for: TPH-G BTEX MTBE <u>TPH-D</u> Oxygenates (5) Other: _____		
EB I.D. (if applicable): _____ @ _____ Time	Duplicate I.D. (if applicable): _____	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: _____		
D.O. (if req'd): Pre-purge: _____ mg/L	Post-purge: _____ mg/L	
O.R.P. (if req'd): Pre-purge: _____ mV	Post-purge: _____ mV	

WELL MONITORING DATA SHEET

Project #: <u>050801-BM2</u>	Client: <u>Geosyntec</u>
Sampler: <u>BW</u>	Date: <u>8/1/05</u>
Well I.D.: <u>MW-2</u>	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): <u>18.20</u>	Depth to Water (DTW): <u>3.80</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>RVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>6.69</u>	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer Peristaltic Disposable Bailer ☒
 Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible ☒ Other _____ Dedicated Tubing

<div><div><div>9.4</div><div>(Gals.) X</div><div>3</div></div><div>=</div><div><div>28.2</div><div>Gals.</div></div></div> <div><div>1 Case Volume</div><div>Specified Volumes</div><div>Calculated Volume</div></div>			<table><tr><th>Well Diameter</th><th>Multiplier</th><th>Well Diameter</th><th>Multiplier</th></tr><tr><td>1"</td><td>0.04</td><td>4"</td><td>0.65</td></tr><tr><td>2"</td><td>0.16</td><td>6"</td><td>1.47</td></tr><tr><td>3"</td><td>0.37</td><td>Other</td><td>radius² * 0.163</td></tr></table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier																
1"	0.04	4"	0.65																
2"	0.16	6"	1.47																
3"	0.37	Other	radius ² * 0.163																

Time	Temp (F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
11031	60.1	6.6	10.36	28	9.5	
11033	58.6 well	6.4	9136µs	24	19	
11035	58.0	6.4	9071	26	28.5	
	waited briefly for 80%					

Did well dewater? Yes <input type="radio"/> No <input checked="" type="radio"/>		Gallons actually evacuated: <u>28.5</u>	
Sampling Date: <u>8/1/05</u>	Sampling Time: <u>11040</u>	Depth to Water: <u>6.69</u>	
Sample I.D.: <u>MW-2</u>	Laboratory: Kiff <u>CalScience</u>	Other _____	
Analyzed for: TPH-G BTEX MTBE <u>TPH-D</u> Oxygenates (5) Other:			
EB I.D. (if applicable): @ _____ Time		Duplicate I.D. (if applicable):	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:			
D.O. (if req'd):	Pre-purge:	<u>mg/L</u>	Post-purge: <u>mg/L</u>
O.R.P. (if req'd):	Pre-purge:	<u>mV</u>	Post-purge: <u>mV</u>

WELL MONITORING DATA SHEET

Project #: <u>050801-BM2</u>	Client: <u>Crossyntec</u>
Sampler: <u>BM</u>	Date: <u>8/1/05</u>
Well I.D.: <u>MW-6</u>	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): <u>18.30</u>	Depth to Water (DTW): <u>8.37</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>10.36</u>	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer Peristaltic Disposable Bailer ✓
 Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible ✓ Other _____ Dedicated Tubing

6.5 (Gals.) X 3 = 19.5 Gals.
 1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or <u>µS</u>)	Turbidity (NTUs)	Gals. Removed	Observations
<u>1616</u>	<u>60.6</u>	<u>7.4</u>	<u>3758</u>	<u>71000</u>	<u>6.5</u>	
<u>1618</u>	<u>58.7</u>	<u>7.3</u>	<u>3859</u>	<u>541</u>	<u>13</u>	
<u>1620</u>	<u>58.0</u>	<u>7.3</u>	<u>3842</u>	<u>344</u>	<u>19.5</u>	
	<u>waited briefly for 80%</u>					

Did well dewater? Yes No Gallons actually evacuated: 19.5

Sampling Date: 8/1/05 Sampling Time: 1625 Depth to Water: 10.36

Sample I.D.: MW-6 Laboratory: Kiff CalScience Other _____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: _____

EB I.D. (if applicable): @ _____ Time Duplicate I.D. (if applicable): _____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: _____

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: <u>050801-BW-2</u>	Client: <u>Geosyntec</u>
Sampler: <u>Bal</u>	Date: <u>8/1/05</u>
Well I.D.: <u>MW-7</u>	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): <u>17.82</u>	Depth to Water (DTW): <u>3.38</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>6.27</u>	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer Peristaltic Disposable Bailer ☒
 Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible ☒ Other _____ Dedicated Tubing

$\frac{9.4}{1 \text{ Case Volume}} \text{ (Gals.) } \times \frac{5}{\text{Specified Volumes}} = \frac{28.2}{\text{Calculated Volume}} \text{ Gals.}$	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1700	60.8	6.9	25.45	23	9.5	
1702	59.0	6.9	23.97	21	19	
1705	58.5	6.9	23.25		28.5	

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Gallons actually evacuated: <u>28.5</u>	
Sampling Date: <u>8/1/05</u>		Sampling Time: <u>1710</u> Depth to Water: <u>6.11</u>	
Sample I.D.: <u>MW-7</u>		Laboratory: Kiff <u>CalScience</u> Other _____	
Analyzed for: TPH-G BTEX MTBE <u>TPH-D</u> Oxygenates (5) Other: _____			
EB I.D. (if applicable): _____ @ _____ Time		Duplicate I.D. (if applicable): <u>DUP</u>	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: <u>SAME</u>			
D.O. (if req'd):	Pre-purge:	mg/L	Post-purge: mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge: mV

SOURCE RECORD BILL OF LADING
FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM
GROUNDWATER WELLS AT:

Greentree
Client

Shareline Development Site

27 St.
Street Address

City, State Eureka CA

THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS IS COLLECTED BY THE CONTRACTOR, MADE UP INTO LOADS OF APPROPRIATE SIZE AND HAULED TO:

The contractor performing this work is BLAINE TECH SERVICES, INC., 1680 Rogers Ave., San Jose, CA 95112 (phone [408] 573-0555).

WELL I.D. GALS.

Nov-1 / 26

new-2 / 28.5

Nov-6 1955

dw-7 1 28.5-

_____ / _____

inse water / 2.5

TOTAL GALS. 105
RECOVERED 25

TS event #

050801-BM2

Signature _____

EC'D AT

BS-SAC

unloaded by

signature

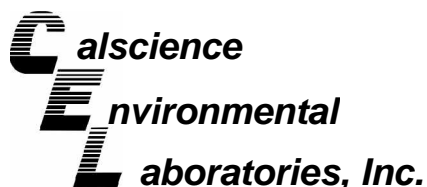
time	date
1	2017-01-01
2	2017-01-02
3	2017-01-03
4	2017-01-04
5	2017-01-05
6	2017-01-06
7	2017-01-07
8	2017-01-08
9	2017-01-09
10	2017-01-10
11	2017-01-11
12	2017-01-12
13	2017-01-13
14	2017-01-14
15	2017-01-15
16	2017-01-16
17	2017-01-17
18	2017-01-18
19	2017-01-19
20	2017-01-20
21	2017-01-21
22	2017-01-22
23	2017-01-23
24	2017-01-24
25	2017-01-25
26	2017-01-26
27	2017-01-27
28	2017-01-28
29	2017-01-29
30	2017-01-30
31	2017-01-31
32	2017-02-01
33	2017-02-02
34	2017-02-03
35	2017-02-04
36	2017-02-05
37	2017-02-06
38	2017-02-07
39	2017-02-08
40	2017-02-09
41	2017-02-10
42	2017-02-11
43	2017-02-12
44	2017-02-13
45	2017-02-14
46	2017-02-15
47	2017-02-16
48	2017-02-17
49	2017-02-18
50	2017-02-19
51	2017-02-20
52	2017-02-21
53	2017-02-22
54	2017-02-23
55	2017-02-24
56	2017-02-25
57	2017-02-26
58	2017-02-27
59	2017-02-28
60	2017-03-01
61	2017-03-02
62	2017-03-03
63	2017-03-04
64	2017-03-05
65	2017-03-06
66	2017-03-07
67	2017-03-08
68	2017-03-09
69	2017-03-10
70	2017-03-11
71	2017-03-12
72	2017-03-13
73	2017-03-14
74	2017-03-15
75	2017-03-16
76	2017-03-17
77	2017-03-18
78	2017-03-19
79	2017-03-20
80	2017-03-21
81	2017-03-22
82	2017-03-23
83	2017-03-24
84	2017-03-25
85	2017-03-26
86	2017-03-27
87	2017-03-28
88	2017-03-29
89	2017-03-30
90	2017-03-31
91	2017-04-01
92	2017-04-02
93	2017-04-03
94	2017-04-04
95	2017-04-05
96	2017-04-06
97	2017-04-07
98	2017-04-08
99	2017-04-09
100	2017-04-10

530 812 105

Signature _____

ATTACHMENT 2

CALSCIENCE ANALYTICAL DATA REPORT



August 12, 2005

Susan Skoe
GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Subject: **Calscience Work Order No.: 05-08-0326**
Client Reference: **Eureka 2T Street, Eureka, CA**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 8/4/2005 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read 'Don Burley', is written over a horizontal line.

Calscience Environmental
Laboratories, Inc.
Don Burley
Project Manager

Analytical Report



GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Date Received: 08/04/05
Work Order No: 05-08-0326
Preparation: EPA 3510C
Method: DHS LUFT

Project: Eureka 2T Street, Eureka, CA

Page 1 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-1	05-08-0326-1	08/01/05	Aqueous	08/11/05	08/11/05	050810B15

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	630	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	98	51-141			

MW-1	05-08-0326-1	08/01/05	Aqueous	08/11/05	08/11/05	050810B15
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	180	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	97	51-141			

MW-2	05-08-0326-2	08/01/05	Aqueous	08/11/05	08/11/05	050810B15
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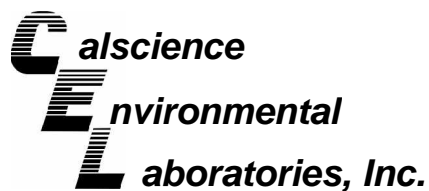
Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	1000	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	92	51-141			

MW-2	05-08-0326-2	08/01/05	Aqueous	08/11/05	08/11/05	050810B15
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	440	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	92	51-141			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Date Received: 08/04/05
Work Order No: 05-08-0326
Preparation: EPA 3510C
Method: DHS LUFT

Project: Eureka 2T Street, Eureka, CA

Page 2 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-6	05-08-0326-3	08/01/05	Aqueous	08/11/05	08/11/05	050810B15

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	1900	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	110	51-141	

MW-6	05-08-0326-3	08/01/05	Aqueous	08/11/05	08/11/05	050810B15
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	550	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	111	51-141	

MW-7	05-08-0326-4	08/01/05	Aqueous	08/11/05	08/11/05	050810B15
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Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	1000	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	87	51-141	

MW-7	05-08-0326-4	08/01/05	Aqueous	08/11/05	08/11/05	050810B15
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	560	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	86	51-141	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



GeoSyntec Consultants
 475 14th Street, Suite 450
 Oakland, CA 94612-1940

Date Received: 08/04/05
 Work Order No: 05-08-0326
 Preparation: EPA 3510C
 Method: DHS LUFT

Project: Eureka 2T Street, Eureka, CA

Page 3 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
DUP	05-08-0326-5	08/01/05	Aqueous	08/10/05	08/11/05	050810B15

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	210	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	95	51-141			

DUP	05-08-0326-5	08/01/05	Aqueous	08/10/05	08/11/05	050810B15
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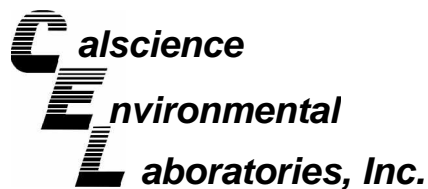
Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	140	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	84	51-141			

Method Blank	098-03-039-808	N/A	Aqueous	08/10/05	08/12/05	050810B15
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Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	92	51-141			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Quality Control - LCS/LCS Duplicate



GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Date Received: N/A
Work Order No: 05-08-0326
Preparation: EPA 3510C
Method: DHS LUFT

Project: Eureka 2T Street, Eureka, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
098-03-039-808	Aqueous	GC 23	08/10/05	08/12/05	050810B15

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel	108	104	60-132	4	0-11	

RPD - Relative Percent Difference , CL - Control Limit

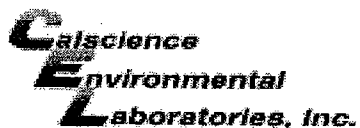
Glossary of Terms and Qualifiers



Work Order Number: 05-08-0326

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.





WORK ORDER #:

05 - 08 - 03 26

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: BTS | GEOSYNTECDATE: 8-4-05

TEMPERATURE - SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

- ☐ Chilled, cooler with temperature blank provided.
☐ Chilled, cooler without temperature blank.
☐ Chilled and placed in cooler with wet ice.
☐ Ambient and placed in cooler with wet ice.
☐ Ambient temperature.
☐ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

- ☐ °C Temperature blank.
3.1 °C IR thermometer.
☐ Ambient temperature.

Initial: WB

CUSTODY SEAL INTACT:

 Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Applicable (N/A): /
Initial: WB

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples.....	<u>/</u>		
Sample container label(s) consistent with custody papers.....	<u>/</u>		
Sample container(s) intact and good condition.....	<u>/</u>		
Correct containers for analyses requested.....	<u>/</u>		
Proper preservation noted on sample label(s).....	<u>/</u>		
VOA vial(s) free of headspace.			<u>/</u>
Tedlar bag(s) free of condensation.....			<u>/</u>

Initial: WB

COMMENTS:
